CLAIMS

1. A method of encoding video data, comprising:

obtaining the video data;

determining, for a coding unit, a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the video data, associated with the coding unit;

encoding the coding unit, wherein encoding the coding unit includes selecting an interpolation filter for motion estimation and motion compensation for the coding unit, and wherein the interpolation filter is selected from the subset of interpolation filters; and

generating an encoded video bitstream, wherein the encoded video bitstream includes the encoded coding unit.

2. The method of claim 1, wherein the subset of interpolation filters is determined based on a coding level of the coding unit.

3. The method of claim 1, wherein the subset of interpolation filters is determined based on a prediction mode for the coding unit.

4. The method of claim 1, wherein the subset of interpolation filters is determined based on motion information associated with the coding unit.

5. The method of claim 1, wherein the subset of interpolation filters is determined based on a coding tool used to code the coding unit.

6. The method of claim 1, wherein the subset of interpolation filters is determined based on a size of the coding unit.

7. The method of claim 1, wherein the interpolation filter is selected from a previously coded block.

8. The method of claim 1, wherein the interpolation filter is selected from a neighboring block of the coding unit.

9. The method of claim 1, further comprising:

merging the interpolation filter with a second interpolation filter, wherein a resulting merged interpolation filter is used for the motion estimation and the motion compensation.

10. The method of claim 1, wherein the interpolation filter is associated with a second interpolation filter, wherein the interpolation filter is for an integer pixel location, and wherein the second interpolation filter is for a fractional pixel location.

11. The method of claim 10, wherein the interpolation filter and the second interpolation filter have different cut-off frequencies.

12. The method of claim 1, wherein the encoded video bitstream includes a value identifying the interpolation filter.

13. The method of claim 1, wherein the set of interpolation filters are not signaled with the encoded video bitstream, and wherein an identity of the interpolation filter can be implied from the encoded video bitstream.

14. An apparatus, comprising:

a memory configured to store video data; and

a processor configured to:

obtain the video data;

determine, for a coding unit, a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the video data, associated with the coding unit;

encode the coding unit, wherein encoding the processing includes selecting an interpolation filter for motion estimation and motion compensation, and wherein the interpolation filter is selected from the subset of interpolation filters; and

generate an encoded video bitstream, wherein the encoded video bitstream includes the encoded coding unit.

15. The apparatus of claim 14, wherein the apparatus comprises a mobile device with a camera for capturing pictures.

16. A computer-readable medium having stored thereon instructions that, when executed by a processor, cause the processor to perform operations including:

obtaining video data;

determining, for a coding unit, a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the video data, associated with the coding unit;

encoding the coding unit, wherein encoding the coding unit includes selecting an interpolation filter for motion estimation and motion compensation, and wherein the interpolation filter is selected from the subset of interpolation filters; and

generating an encoded video bitstream, wherein the encoded video bitstream includes the encoded coding unit.

17. An apparatus for encoding video data, comprising:

means for obtaining video data;

means for determining, for a coding unit, a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the video data, associated with the coding unit;

means for encoding the coding unit, wherein the means for encoding the coding unit includes selecting an interpolation filter for motion estimation and motion compensation, and wherein the interpolation filter is selected from a set of interpolation filters; and

means for generating an encoded video bitstream, wherein the encoded video bitstream includes the encoded coding unit.

18. A method of decoding video data, comprising:

obtaining an encoded video bitstream;

determining a reference frame for a coding unit in a current frame from the encoded video bitstream;

determining a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the encoded video bitstream,

associated with the coding unit;

determining an interpolation filter from the subset of interpolation filters; and

using the reference frame and the interpolation filter to reconstruct the coding unit.

19. The method of claim 18, wherein the subset of interpolation filters is determined based on a coding level of the coding unit.

20. The method of claim 18, wherein the subset of interpolation filters is determined based on a prediction mode for the coding unit.

21. The method of claim 18, wherein the subset of interpolation filters is determined based on motion information associated with the coding unit.

22. The method of claim 18, wherein the subset of interpolation filters is determined based on a coding tool used to code the coding unit.

23. The method of claim 18, wherein the subset of interpolation filters is determined based on a size of the coding unit.

24. The method of claim 18, wherein the interpolation filter is selected from a previously coded block.

25. The method of claim 18, wherein the interpolation filter is selected from a neighboring block.

26. The method of claim 18, further comprising:

merging the interpolation filter with a second interpolation filter, wherein a resulting merged interpolation filter is used for reconstructing the coding unit.

27. The method of claim 18, wherein the interpolation filter is associated with a second interpolation filter, wherein the interpolation filter is for an integer pixel location, and wherein the second interpolation filter is for a fractional pixel location.

28. The method of claim 27, wherein the interpolation filter and the second interpolation filter have different cut-off frequencies.

29. The method of claim 18, wherein the encoded video bitstream includes a value identifying the interpolation filter.

30. The method of claim 18, further comprising:

deriving an identity of the interpolation filter using the encoded video bitstream.

31. An apparatus, comprising:

a memory configured to store encoded video data; and

a processor configured to:

obtain an encoded video bitstream;

determine a reference frame for a coding unit in a current frame from the encoded video bitstream;

determine a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the encoded video bitstream, associated with the coding unit;

determine an interpolation filter from the subset of interpolation filters; and

use the reference frame and the interpolation filter to reconstruct the coding unit.

32. The apparatus of claim 31, further comprising:

a display for displaying the video data.

33. The apparatus of claim 31, wherein the apparatus comprises a mobile device with a camera for capturing pictures.

34. A computer-readable medium having stored thereon instructions that, when executed by a processor, cause the processor to perform operations including:

obtaining an encoded video bitstream;

determining a reference frame for a coding unit in a current frame from the encoded video bitstream;

determining a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the encoded video bitstream, associated with the coding unit;

determining an interpolation filter from the subset of interpolation filters; and

using the reference frame and the interpolation filter to reconstruct the coding unit.

35. An apparatus for decode video data, comprising:

means for obtaining an encoded video bitstream;

means for determining a reference frame for a coding unit in a current frame from the encoded video bitstream;

means for determining a subset of interpolation filters from a set of interpolation filters, the subset of interpolation filters including a plurality of interpolation filters, wherein the subset of interpolation filters is determined based on information, in the encoded video bitstream, associated with the coding unit;

means for determining an interpolation filter from the subset of interpolation filters; and

means for using the reference frame and the interpolation filter to reconstruct the coding unit.